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“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

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IS 10647 (1983): Wheel Bearing Grease [PCD 3: Petroleum, Lubricants and their Related Products]



“ज्ञान से एक नये भारत का निर्माण”

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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

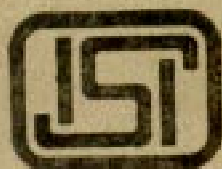


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*Indian Standard*  
SPECIFICATION FOR  
WHEEL BEARING GREASE

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INDIAN STANDARDS INSTITUTION  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

# *Indian Standard*

## SPECIFICATION FOR WHEEL BEARING GREASE

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*Indian Standard*  
**SPECIFICATION FOR  
WHEEL BEARING GREASE**

**0. FOREWORD**

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 9 September 1983, after the draft finalized by the Lubricants and Related Products Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

**0.2** Indian Standards Institution has published a number of specifications on greases such as automotive grease, general purpose grease, graphited grease, antifriction bearing grease, locomotive grease, low temperature grease, lithium soap grease, etc. It was felt that there was no suitable specification for a good quality wheel bearing grease required by the automotive industry and also used by Railways. In order to meet the requirements of the industry, this specification is being prepared with a view to facilitate the supply of this product to the various users.

**0.3** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS:2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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**1. SCOPE**

**1.1** This standard prescribes the requirements and the methods of sampling and test for wheel bearing grease intended for use as lubricant in automotive wheel bearings, universal joints, axle journal boxes, etc.

**2. REQUIREMENTS**

**2.1 General Requirements**—The material shall be homogeneous and of fibrous texture and free from objectionable odour and visible impurities. No fillers should be used in the composition.

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\*Rules for rounding off numerical values ( *revised* ).

**2.2 Detailed Requirements**—The material shall also comply with the requirements given in Table 1, when tested according to the methods given 'P' series of IS:1448\*. Reference to the relevant methods is given in col 4 of the table.

**2.3 Composition**—The material shall be made from refined mineral lubricating oil of the following specifications and sodium soap with or without additives:

<i>Characteristic</i>	<i>Requirement</i>	<i>Method of Test, Ref to 'P' series of IS:1448*</i>
i) Kinematic viscosity in cSt at 100°C	15.5 to 20.5	P:25
ii) Flash point, cleaveland (open) cup, °C, <i>Min</i>	200	P:69

**TABLE 1 REQUIREMENTS FOR WHEEL BEARING GREASE**

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST (REF TO 'P' OF IS:1448*)
(1)	(2)	(3)	(4)
i)	Consistency of the grease at 25±0.5°C:		P:60
	a) Unworked penetration	Shall not differ by more than 25 units from 60 strokes	
	b) 60 strokes	250 to 280	
	c) 10 000 strokes	Shall not differ by more than 25 units from 60 strokes	
ii)	Drop point, °C, <i>Min</i>	180	P:52
iii)	Free acidity (as Oleic acid ) percent by mass, <i>Max</i>	0.25	P:53

\*Methods of test for petroleum and its products.

( Continued )

\*Methods of test for petroleum and its products.



TABLE 1 REQUIREMENTS FOR WHEEL BEARING GREASE— *Contd*

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST ( REF TO 'P' OF IS : 1448* )
(1)	(2)	(3)	(4)
iv)	Free alkalinity ( as sodium hydroxide ), percent by mass, <i>Max</i>	0.30	P : 53
v)	Copper strip corrosion at 100°C for 24 h	Negative	P : 51
vi)	Water content, percent by mass, <i>Max</i>	0.30	P : 40
vii)	Soap content, percent by mass, <i>Max</i>	20	P : †
viii)	‡Oxidation stability ( 100 h ), drop in pressure, kgf/cm <sup>2</sup> , <i>Max</i>	1.0	P : 94
ix)	Thermal stability, 30 h at 100°C percent oil separated, <i>Max</i>	6.0	P : 89
x)	Leakage and deposit forming tendencies ( wheel bearing test )		P : §
	a) Leakage by mass, <i>Max</i>	8.0 g	
	b) Deposit in the wheel bearing races or the rollers	Shall be free from deposits	
	c) Evidence of abnormal changes in the consistency or structure of the material	Not limited, but the observations are to be reported	
	d) Indication of dry running of races	do	
xi)	‡Roll stability test, 4 h, change in consistency, percent, <i>Max</i>	10.0	P :

\*Methods of test for petroleum and its products.

†Under preparation. Till such time, ASTM D 128-64 may be followed.

‡These are type tests for which manufacturers/suppliers shall give the guarantee for their compliance.

§Under preparation. Till such time, ASTM D 1263-61 may be followed.

||Under preparation. Till such time, ASTM D 1831-64 may be followed.

**2.4 Keeping Quality (Shelf Life)** — The keeping quality of the material shall be such that when stored in original sealed containers under normal conditions, it shall retain the properties given in the specification for not less than one year from the date of delivery of the product.

### **3. PACKING AND MARKING**

**3.1 Packing** — The material shall be packed in a metal or any other suitable containers as agreed to between the purchaser and the supplier.

**3.2 Marking** — The container shall be marked with the name of the material; net mass in the container; name of the manufacturer and recognised trade-mark, if any; batch number or code number; and date of manufacture.

**3.2.1** The containers may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution ( Certification Marks ) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence, for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

### **4. SAMPLING**

**4.1** Representative samples of the material shall be drawn as prescribed in IS: 1447-1966\*.

**4.2 Criteria for Conformity** — Individual samples shall be taken and tested for all the requirements as prescribed in 2.

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\*Methods of sampling of petroleum and its products.

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